

**Amendments to the Claims:**

This listing of claims will replace all prior versions, and listings, of claims in the application:

**Listing of Claims:**

1. (Currently Amended) ~~A method in a computer system computer-~~  
~~implemented method for generating an output including displaying information on one or more~~  
~~user interfaces~~ regarding the likelihood a person has a gene variant indicative of an atypical  
event, comprising the steps of:

~~displaying a first user interface to a clinician, the user interface configured~~  
~~to display and receive clinical agent information including at least one identifier~~  
~~of a clinical agent;~~

~~receiving from the user interface the clinician's inputs including at least~~  
~~one identifier of a clinical agent;~~

~~receiving clinical agent information, the clinical agent information~~  
~~including an identifier of the agent;~~

~~accessing a data structure to determine if a gene variant is known to be~~  
~~associated with one or more atypical events for the clinical agent information;~~

~~inquiring if the person has a stored genetic test result value for the gene~~  
~~variant;~~

~~accessing hereditary information for the person if the person does not have~~  
~~a genetic test result value for the genetic variant, the hereditary information being~~  
~~information that may be utilized to determine if the person has a predisposition~~  
~~for certain conditions;~~

utilizing the hereditary information for the person to determine the likelihood the person has the gene variant;~~and~~

generating an output including information regarding the likelihood that the person has the gene variant indicative of an atypical event based on the hereditary information; and

displaying a second user interface to the clinician, the user interface configured to display the output regarding the likelihood the person has the gene variant indicative of an atypical event based on the hereditary information.

2. (Canceled).

3. (Currently Amended) The method of claim 1, wherein the hereditary information includes ethnicity, gender or geographic origin.

4. (Canceled)

5. (Previously Presented) The method of claim 1, wherein the accessing of the hereditary information comprises accessing the hereditary information from an electronic medical record of the person stored within a comprehensive healthcare system.

6. (Currently amended) The method of claim 1, further comprising the step of initiating a one or more clinical actions if a test result value is not available for the person and the information regarding the risks indicates a significant risk that the person has the gene variant associated with an atypical event.

7. (Currently amended) The method of claim 6, wherein the one or more clinical actions comprise at least one of is ordering a genetic test, and displaying a third user interface configured to display a notification to the clinician that the agent should be suspended in view of the risk of an atypical event, canceling the order for the clinical agent absent input from the clinician to the contrary, and recommending an alternative clinical agent.

8. (Currently Amended) A computer system embodied on one or more computer storage media having computer-executable instructions embodied thereon for ~~generating an output including~~ displaying information on one or more user interfaces regarding the likelihood that the person has the gene variant indicative of an atypical event based on the hereditary information, comprising:

a first displaying component that displays a first user interface to a clinician, the user interface configured to display and receive clinical agent information including at least one identifier of a clinical agent;

a receiving component that receives from the user interface the clinician's inputs including at least one identifier of a clinical agent ~~clinical agent information, the clinical agent information including an identifier of the agent;~~

a first accessing component for accessing a data structure to determine if a gene variant is known to be associated with one or more atypical events for the clinical agent information;

an inquiring component that inquires if the person has a stored genetic test result value for the gene variant;

a second accessing component for accessing hereditary information for the person if the person does not have a genetic test result value for the gene variant,

the hereditary information being information that may be utilized to determine if the person has a predisposition for certain conditions;

a utilizing component for utilizing the hereditary information for the person to determine the likelihood the person has the gene variant; ~~and~~

a generating component that generates an output including information regarding the likelihood that the person has the gene variant indicative of an atypical event based on the hereditary information; and

a second displaying component for displaying a second user interface to the clinician, the user interface configured to display the output regarding the likelihood the person has the gene variant indicative of an atypical event based on the hereditary information.

9. (Canceled)

10. (Currently Amended) The computer system of claim 8, wherein the hereditary information includes ethnicity, gender or geographic origin.

11. (Canceled)

12. (Previously Presented) The computer system of claim 8, wherein the second accessing component accesses the hereditary information from an electronic medical record of the person stored within a comprehensive healthcare system.

13. (Currently Amended) The computer system of claim 8, further comprising an initiating component that initiates one or more a clinical actions if a test result value is not available for the person and the information regarding the risks indicates a significant risk that the person has the gene variant associated with an atypical event.

14. (Currently Amended) The computer system of claim 13, wherein the one or more clinical actions comprise at least one of ~~is~~ ordering a genetic test and displaying a third user interface configured to display a notification to the clinician that the agent should be suspended in view of the risk of an atypical event, canceling the order for the clinical agent absent input from the clinician to the contrary, and recommending an alternative clinical agent.

15. (Currently Amended) A computer-readable storage medium containing instructions for a method for controlling a computer system for ~~generating an output including displaying~~ information on one or more user interfaces regarding the likelihood that the person has the gene variant indicative of an atypical event based on the hereditary information, the method comprising the steps of:

displaying a first user interface to a clinician, the user interface configured to display and receive clinical agent information including at least one identifier of a clinical agent;

receiving from the user interface the clinician's input including at least one identifier of a clinical agent;

~~receiving clinical agent information, the clinical agent information including an identifier of the agent;~~

accessing a data structure to determine if a gene variant is known to be associated with one or more atypical events for the clinical agent information;

inquiring if the person has a stored genetic test result value for the gene variant;

accessing hereditary information for the person if the person does not have a genetic test result value for the genetic variant, the hereditary information being information that may be utilized to determine if the person has a predisposition for certain conditions;

utilizing the hereditary information for the person to determine the likelihood the person has the gene variant; ~~and~~

generating an output including information regarding the likelihood that the person has the gene variant indicative of an atypical event based on the hereditary information; and

displaying a second user interface to the clinician, the user interface configured to display the output regarding the likelihood the person has the gene variant indicative of an atypical event based on the hereditary information.

16. (Canceled)

17. (Currently Amended) The computer-readable storage medium of claim 15, wherein the hereditary information includes ethnicity, whether the person's parents had the gene variant, gender and geographic origin.

18. (Canceled)

19. (Currently Amended) The computer-readable storage medium of claim 15, wherein the accessing of the hereditary information comprises accessing the hereditary information from an electronic medical record of the person stored within a comprehensive healthcare system.

20. (Currently Amended) The computer-readable storage medium of claim 15, further comprising the step of initiating a one or more clinical actions if a test result value is not available for the person and the information regarding the risks indicates a significant risk that the person has the gene variant associated with an atypical event.

21. (Currently Amended) The computer-readable storage medium of claim 20, wherein the one or more clinical actions comprise at least one of ~~is~~ ordering a genetic test and displaying a third user interface configured to display a notification to the clinician that the agent should be suspended in view of the risk of an atypical event, canceling the order for the clinical agent absent input from the clinician to the contrary, and recommending an alternative clinical agent.

22. (New) The method of claim 1, wherein the hereditary information comprises one of the genetic characteristics of the person's family members or other relevant family history, demographic information for the person or combinations thereof, wherein the demographic information is indicative of genetic predisposition to certain conditions.

23. (New) The method of claim 1, further comprising:

storing the output including information regarding the likelihood that the person has a gene variant indicative of an atypical event based on the hereditary information in the patient's electronic medical record.